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(54) Title: PLANT ALPHA FARNESENE SYNTHASE AND POLYNUCLEOTIDES ENCODING SAME

(57) **Abstract:** The present invention provides an isolated alpha-farnesene synthase and polynucleotide sequences encoding the enzyme. The invention also provides nucleic acid constructs, vectors and host cells incorporating the polynucleotide sequences. It further relates to the production of alpha-farnesene using the enzyme and modulation of alpha-farnesene synthesis in plants and selection of plants with altered alpha-farnesene synthase activity.